



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,526	12/03/2003	Raymond K. Orr	79115-26 /pw	3203

7590 04/19/2006

SMART & BIGGAR  
P.O. Box 2999, Station D  
900-55 Metcalfe Street  
Ottawa, ON K1P 5Y6  
CANADA

EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

2835

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/725,526

Applicant(s)

ORR ET AL.

Examiner

Michael Rutland-Wallis

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 04/29/04.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the switch mode power converters and a poly-phase arrangement of at least claims 8 and 12, also the temperature sensor of claim 18 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

Art Unit: 2835

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a power supply arrangement and power distribution network, does not reasonably provide enablement for fluid power distribution system which comprises fluid power supplies and fluid driven loads and associated drains. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with this claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what applicant intends by the limitation "fluid

Art Unit: 2835

supply" and "fluid drains". At least these limitations in the claim are not depicted or described in the specification to render at least this limitation definite.

### ***Claim Objections***

Claims 5 and 11 are objected to as the limitation "the power distribution network with different relative weights" it is unclear whether applicant intends weight of the load connected to the network or to the resistance of the network itself. Where the limitation "weight" is understood to refer to the amount of current drawn.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 9, 15-17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Rock (U.S. Pat. No. 6,121,693)

With respect to claims 1, 9 and 15 Rock teaches a distributed power supply arrangement comprising a plurality of power sources (item 61a-c) for supplying power to a plurality of loads via a power distribution network (item 65, 75 fig 1 or 2), the power sources and the loads being connected to the power distribution network whereby the power sources are coupled to the loads via respective resistances (see Fig. 4 load isolators contains resistors items 100a-100n alternatively simply the line resistance

Art Unit: 2835

associated with each connected load) of the power distribution network, the arrangement further comprising at least one voltage sensor (item 62a-c supply isolators monitor for a threshold voltage see for example claim 5 in column 6 lines 60-65) for sensing voltage at least one point in the power distribution network, wherein each of the power sources is responsive (switched off) to the sensed voltage for supplying a regulated current or a regulated power to the power distribution network.

With respect to claim 2, 17 and 19 Rock teaches a plurality of said voltage sensors (item 62a-c senses the voltage of each supply respectively) for sensing voltages at a plurality of points in the power distribution network.

With respect to claim 4 and 16 Rock teaches the power sources comprise regulated current sources, as the supply isolators regulate the current and the supplies of Rock are output a regulated current to supply the shared loads in order to compensate for power droop.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2835

Claims 3, 5 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock (U.S. Pat. No. 6,121,693) in view of Murabayashi et al. (U.S. Pat. No. 6,856,047)

With respect to claim 3 and 10 Rock teaches the device of claim 1 and 2 but does not teach the sensing of an average of the sensed voltages for supplying said regulated current or regulated power to the power distribution network. Murabayashi teaches a power distribution system wherein voltage sensing is performed using a voltage average (column 8 line 25-40). It would have been obvious to one of ordinary skill in that art at the time of the invention modify Rock to sense an average voltage in order to insure the detection of a voltage abnormality of the supply or system.

With respect to claim 5 and 11 Rock teaches the power sources are arranged for supplying regulated currents to the power distribution network, Rock teaches at least two types of load connected to the distribution system. It would have been obvious to one of ordinary skill in that art at the time of the invention use different weights to the distribution system in order to power critical or high demand loads and low demand loads.

Claims 6-7 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rock (U.S. Pat. No. 6,121,693) in view of Hayward et al. (U.S. Pat. No. 6,317,345)

With respect to claims 6 and 14 Rock teaches the device of claim 1 and 2 but does not teach the power distribution network comprises power and ground planes of a circuit card on which the loads are provided. Hayward teaches plural power circuits and ground plane circuitry. It would have been obvious to one of ordinary skill in that art at

Art Unit: 2835

the time of the invention modify Rock to implement the system on claim 1 on a circuit card in order to use the system in a backplane arrangement.

With respect to claims 7 and 13 Hayward teaches the plurality of power circuits are arranged on the circuit card.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rock (U.S. Pat. No. 6,121,693) in view of Levran et al. (U.S. Pat. No. 5,982,645)

With respect to claim 8 and 12 Rock teaches the device of claim 1 but does not teach the power sources comprise switch mode power converters, the arrangement further including a control unit for controlling the power sources to operate in synchronism with different phases. The use of switch mode power supplies and or converters is well known in that art as seen for example in Levran teaches a similar to the device of claim 1 and further teaches Fig. 1 and 2 depicting 3-phase AC power input and conversion to DC and control circuitry. It would have been obvious to one of ordinary skill in that art at the time of the invention modify Rock to use switch mode converters, control circuitry to synchronize the power to reduce power factor losses.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rock (U.S. Pat. No. 6,121,693) in view of Wantanabe et al. (U.S. Pat. No. 6,373,671)

With respect to claim 18 Rock teaches the device of claim 1 and 2 but does not teach a temperature at a respective point in the power distribution network. Wantanabe teaches a power distribution network capable of detecting temper parameters at a point in the network. It would have been obvious to one of ordinary skill in that art at the time



Art Unit: 2835

of the invention modify Rock to detect a temperature parameter instead of a voltage parameter in order to assure the supply does not overheat.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MRW

  
LYNN FEILD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800